February 3, 2000

Mr. Charles Kulp
President
Statewide Medical Services
3601 East 9th Street,
Indianapolis, Indiana, 46201-2511

Re: Registered Construction and Operation Status,
R 097-11796-00339

Dear Mr. Kulp:

The application from Statewide Medical Services, received on March 30, 1999, with additional information received on May 4, 1999 and October 7, 1999, has been reviewed. Based on the data submitted and the new provisions in IAPCB Regulation 2 (Permits), state regulations 326 IAC 2-5.1-2 and 326 IAC 2-5.5, and the EPA comments on the pyrolysis status of the proposed facility, it has been determined that the following medical/infectious waste pyrolysis system, to be located at 3601 East 9th Street, Indianapolis, Indiana, is classified as registered:

one (1) new MED/dispose 580 Packed Tower Pyrolysis System (Emission Unit ID #002), 75 ft^3, maximum capacity 580 pounds of medical waste per hour, using natural gas as a primary fuel (1.2 MMBtu/hr heat input capacity), consisting of vertical column (packed tower - pyrolysis chamber) with upper waste stream point of entry, pyrolysing heat zone at the bottom, where excess combustibles are elevated in temperature to 2,700 ^{0}F, air tight coke pit under the packed tower, and thermal oxidation chamber for complete combustion at about 2,000 ^{0}F of all the volatiles generated in the pyrolysis chamber.

This Registration shall expire February 3, 2005.

The following conditions shall be applicable:

1. Pursuant to IAPCB Regulation 5-1-2 (Smoke and other visible emissions) and 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in IAPCB Regulation 5-1-3 (Exception) and 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

   a) Visible emissions shall not exceed an average of 30% opacity in 24 consecutive readings.

   b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

2. The proposed PTPS shall:

   (a) contain the thermal oxidation chamber for complete combustion at about 2,000 ^{0}F of all the volatiles generated in the pyrolysis chamber;

   (c) comply with 326 IAC 5-1 and 326 IAC 2;

   (d) be maintained properly as specified by the manufacturer and approved by the Administrator;

   (e) be operated according to the manufacturer's recommendations and only burn waste

approved by the administrator;

(f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;

(g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(h) not emit particulate matter in excess of three-tenths (0.3) pounds per thousand pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air.

(i) not create a nuisance or a fire hazard.

3. Pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2-1-1.11 (Compliance Requirements), the initial compliance stack tests shall be performed on the Packed Tower Pyrolysis System EU ID # 002 for PM, SO_2, VOC, CO, NOx, HCl, in order to verify the emission rates, PM emissions compliance and demonstrate compliance with the U.S. EPA requirements (Condition 4) for the medical/infectious waste pyrolysis units.

(a) These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the respective reference methods according to 40 CFR, part 60, appendix A or as approved by the Administrator, within 60 days after achieving maximum production rate, but no later than 90 days after initial start-up.

(c) A test protocol shall be submitted to the OAM, Compliance Data Section, and ERMD, Air Quality Management Section, Compliance Data Group, 35 days in advance of the test.

(d) The OAM, Compliance Data Section, and ERMD, Compliance Data Group, shall be notified of the actual test date at least two (2) weeks prior to the date.

(e) All tests reports must be received by OAM, Compliance Data Section, and ERMD, Compliance Data Group, within 45 days of completion of the testing.

(f) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM and ERMD that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.

(g) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 60 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

4. In order to stay out of the 40 CFR 60, Subpart Ec requirements, the source will comply with the following conditions:

(a) Fuel-to-air (methane-to-air) ratio while utilizing natural gas as the pyrolyzing fuel must not be less than 8.08% (substoichiometric condition) at any time.

(b) Maximum allowed level of the fuel-to-air ratio while utilizing waste gas as the pyrolyzing fuel

shall be determined during the initial stack testing.

(c) Positive pressure must be maintained in the pyrolysis chamber at all times.

(d) During the initial stack test the fuel-to-air ratio at the inlet of the burner, positive pressure level in the pyrolysis zone of the Packed Tower and the Oxygen (O_2) level in the pyrolysis chamber will be determined to ensure an oxygen-free atmosphere in the pyrolysis chamber.

(e) Immediately after the initial stack test a lead seal will be placed on the air-fuel mixing Venturi valve to make it impossible to manually change fuel-to-air ratio during the PTPS operation, whether utilizing natural gas or waste gas as the pyrolyzing fuel. Amount of natural gas will be automatically adjusted by a computerized control system to maintain the predetermined fuel-to-air ratio.

(e) Continuous monitoring will be maintained of the fuel-to-air ratio and Oxygen (O_2) level in the tower pyrolysis chamber which shall be kept at the levels, determined during the initial stack test. Positive pressure readings shall be taken at the time of the PTPS start up and every 4 hours of its operation.

(f) The sensors, gas analyzers and other measuring instruments will be calibrated and maintained according to its manufacturers specifications.

(g) Stripcharts of fuel-to-air ratio and O_2 level in the tower pyrolysis chamber readings, records of pressure in the pyrolysis chamber will be kept at the source for the period of 5 (five) years and available for inspection at any time.

If any of those conditions are not met at any time, the source must notify the EPA, IDEM (OAM) and ERMD immediately.

No other requirements of CFR 60, Subpart Ec will apply.

5. Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), Statewide Medical Services shall prepare and maintain a preventive maintenance plan, including the following information:

   (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing the facility equipment.

   (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.

   (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

   The preventive maintenance plan shall be submitted to the Environmental Resources Management Division (ERMD) upon request and shall be subject to review and approval.

6. Pursuant to IAPCB Regulation 2 (Permits) and state regulation 326 IAC 2-5.1-2(f)(3), an authorized individual shall provide an annual notice to the Environmental Resources Management Division and the Office of Air Management that the source is in operation and in compliance with this registration, in the format attached, no later than April 15 of each year at the following addresses:

Compliance Data Section
Office of Air Management
100 North Senate Avenue
P.O. Box 6015
Indianapolis, IN 46206-6015
and
Environmental Resources Management Division
Air Quality Management Section, Compliance Data Group
2700 South Belmont Avenue
Indianapolis, Indiana 46221-2097

This Registration is the second air approval issued to this source. The source may operate according to IAPCB Regulation 2 (Permits) and state regulation 326 IAC 2-5.5 (Registrations).

The Permittee shall submit an application to renew this Registration prior to November 3, 2004. An application or notification shall be submitted in accordance with IAPCB Regulation 2 (permits) and state regulation 326 IAC 2 to the ERMD and the Office of Air Management (OAM, IDEM) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Please keep this Registration (or a copy) on file at the facility (specified above) available for inspection. Please sign a copy of this letter on the line below and return the copy. The signature acknowledges only that the Registrationt has been received.

If you have any questions, please contact Mr. Boris Gorlin at (317) 327-2234. Thank you for your time and cooperation in this matter.

Sincerely,

Robert Holm, Ph.D.
Administrator

_____
Signature/Name (acknowledging receipt)

enclosure - one return copy

BG

cc: Mark Caraher, Permits Program Manager
Matt Mosier, Compliance Program Manager
Cheryl Carlson, Enforcement Program Manager
Mindy Hahn, IDEM

Registration
Annual Notification

This form should be used to comply with the notification requirements under ***326 IAC 2-5.1-2(f)(3) or 326 IAC 2-5.5-4(a)(3)***

Company Name:
Address:
City:
Authorized individual:
Phone #:
Registration #:

I hereby certify that **Statewide Medical Services** is still in operation and is in compliance with the requirements of Registration **R 097-11796-00339**.

Name (typed):
Title:
Signature:
Date:

Indianapolis Environmental Resources Management Division
Air Quality Management Section

and

Indiana Department of Environmental Management
Office of Air Management

Technical Support Document (TSD) for Registration

Source Background and Description

Source Name:	Statewide Medical Services
Source Location:	3601 East 9th Street, Indianapolis, Indiana, 46201-2511
County:	Marion
Operation Permit No.	**R 097-11796-00339**
SIC Code:	4953
Permit Reviewer:	Boris Gorlin

The Environmental Resources Management Division (ERMD) has reviewed an application from Statewide Medical Services relating to the construction and operation of one (1) new MED/dispose 580 Packed Tower Pyrolysis System Unit (Emission Unit ID #002), 75 ft^3, maximum capacity 580 pounds of medical waste per hour, using natural gas as a primary fuel (1.2 MMBtu/hr heat input capacity), consisting of vertical column (packed tower - pyrolysis chamber) with upper waste stream point of entry, pyrolysing heat zone at the bottom, where excess combustibles are elevated in temperature to 2,700 ^{0}F, air tight coke pit under the packed tower, and thermal oxidation chamber for complete combustion at about 2,000 ^{0}F of all the volatiles generated in the pyrolysis chamber.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Existing Approvals

The source has been operating under the previous approval:

(a) Construction Permit CP 099-0339-01, issued on December 28, 1999.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
002	Pyrolysis System	21	5	5073	2000

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Administrator that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 16, 1999, with additional information received on May 4, 1999 June 29, 1999 and October 7, 1999.

The proposed Packed Tower Pyrolysis System (PTPS) was reviewed by the U.S. EPA regarding its pyrolysis status and determined to be exempt from the NSPS 40CFR 60, Subpart Ec

Emissions Calculations

The calculations submitted by the applicant have been verified and found to be accurate and correct (see Appendix A - Emissions Calculations).

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Potential Emissions (tons/year)
Particulate Matter (PM)	2.409
Particulate Matter (PM10)	2.409
Sulfur Dioxide (SO_2)	0.235
Volatile Organic Compounds (VOC)	0.0079
Carbon Monoxide (CO)	0.604
Nitrogen Oxides (NO_x)	4.056
Single Hazardous Air Pollutant (HAP) -HCl	7.008
Combination of HAPs	7.0083

(a) Emission factors for Packed Tower Pyrolysis System (EU ID # 002) are obtained from stack tests performed on a similar unit and will be verified during a required initial stack test.

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations

(b) The proposed unit maximum potential to emit is greater than 1 ton/yr but less than 10 ton/yr of individual HAP (HCl), greater than 2.5 ton/yr but less than 25 ton/yr of combination of HAPs.

Construction Permit, issued for the existing incinerator (EU ID # 001), is equivalent to an exemption, pursuant to 326 IAC 2-5-1.1. The source has an intention to demolish this existing incinerator after construction of the proposed Pyrolysis System.

Based on the above considerations, and pursuant to IAC 326 2-5.1-2, a Registration is required for the proposed Packed Tower Pyrolysis System (EU ID # 002).

County Attainment Status

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were

reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marion County has been classified as attainment or unclassifiable for (PM10). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

New Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	6.10
PM10	6.10
SO_2	1.035
VOC	0.118
CO	1.674
NO_x	5.356
Single HAP (HCl)	8.628
Combination HAPs	8.634

(a) This existing source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

(a) each criteria pollutant is less than 100 tons per year,

(b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and

(c) any combination of HAPs is less than 25 tons/year.

This is the second air approval issued to this source.

Federal Rule Applicability

There are no National Emission Standards for Hazardous Air Pollutants for Source Categories (40 CFR Part 63) applicable to this facility.

This source is not subject to NSPS 40 CFR 60, Subpart Ce, because it was constructed after June 20, 1996.

The MED/dispose 580 Packed Tower Pyrolysis System (Emission Unit ID #002) is not subject to the New Source Performance Standard, 326 IAC 12, and 40 CFR 60, Subpart Ec as a pyrolysis unit.

In order to stay out of the 40 CFR 60, Subpart Ec requirements, the source will comply with the following conditions:

(a) Fuel-to-air (methane-to-air) ratio while utilizing natural gas as the pyrolyzing fuel must not be less than 8.08% (substoichiometric condition) at any time.

(b) Maximum allowed level of the fuel-to-air ratio while utilizing waste gas as the pyrolyzing fuel shall be determined during the initial stack testing.

(c) Positive pressure must be maintained in the pyrolysis chamber at all times.

(d) During the initial stack test the fuel-to-air ratio at the inlet of the burner, positive pressure level in the pyrolysis zone of the Packed Tower and the Oxygen (O_2) level in the pyrolysis chamber will be determined to ensure an oxygen-free atmosphere in the pyrolysis chamber.

(e) Immediately after the initial stack test a lead seal will be placed on the air-fuel mixing Venturi valve to make it impossible to manually change fuel-to-air ratio during the PTPS operation, whether utilizing natural gas or waste gas as the pyrolyzing fuel. Amount of natural gas will be automatically adjusted by a computerized control system to maintain the predetermined fuel-to-air ratio.

(e) Continuous monitoring will be maintained of the fuel-to-air ratio and Oxygen (O_2) level in the tower pyrolysis chamber which shall be kept at the levels, determined during the initial stack test. Positive pressure readings shall be taken at the time of the PTPS start up and every 4 hours of its operation.

(f) The sensors, gas analyzers and other measuring instruments will be calibrated and maintained according to its manufacturers specifications.

(g) Stripcharts of fuel-to-air ratio and O_2 level in the tower pyrolysis chamber readings, records of pressure in the pyrolysis chamber will be kept at the source for the period of 5 (five) years and available for inspection at any time.

If any of those conditions are not met at any time, the source must notify the EPA, IDEM (OAM) and ERMD immediately.

No other requirements of CFR 60, Subpart Ec will apply.

State Rule Applicability

326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to IAPCB Regulation 5-1-2 (Smoke and other visible emissions) and 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in IAPCB Regulation 5-1-3 (Exception) and 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

a) Visible emissions shall not exceed an average of 30% opacity in 24 consecutive readings.

b) Visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 4-2-2 (Incinerators: requirements)

As a pyrolysis medical waste combustor, the proposed MED/dispose 580 Packed Tower Pyrolysis System is not subject to the incinerators requirements. However, the source agreed to comply with the following 326 IAC 4-2-2 (Incinerators) requirements.

The proposed PTPS shall:

(a) contain the thermal oxidation chamber for complete combustion at about 2,000 ^{0}F of all the volatiles generated in the pyrolysis chamber;

(c) comply with 326 IAC 5-1 and 326 IAC 2;

(d) be maintained properly as specified by the manufacturer and approved by the Administrator;

(e) be operated according to the manufacturer's recommendations and only burn waste approved by the administrator;

(f) comply with other state and/or local rules or ordinances regarding installation and operation of incinerators;

(g) be operated so that emissions of hazardous material including, but not limited to, viable pathogenic bacteria, dangerous chemicals or gases, or noxious odors are prevented;

(h) not emit particulate matter in excess of three-tenths (0.3) pounds per thousand pounds of dry exhaust gas at standard conditions corrected to fifty percent (50%) excess air. The maximum potential emission rates of the proposed unit are less than this limit, therefore the source will be in compliance with this rule;

(i) not create a nuisance or a fire hazard.

If any of the above requirements is not met, the PTPS operation should be terminated immediately.

326 IAC 2-1-3 (Construction and Operating Permit Requirements)
326 IAC 2-1-1.11 (Compliance requirements)

(b) Pursuant to IAPCB Regulation 2 (Permits), 326 IAC 2-1-3, 326 IAC 2-1-1.11and 326 IAC 12 (New Source Performance Standards), in order to verify the emission rates, PM emissions compliance and demonstrate compliance with the U.S. EPA requirements (Permit Condition 4) for the medical/infectious waste pyrolysis units, the initial stack tests shall be performed for PM, SO_2, VOC, CO, NOx, HCl, and visible emissions on the Packed Tower Pyrolysis System EU ID # 002.

(c) These tests shall be performed according to 326 IAC 3-2.1 (Source Sampling Procedures) using the respective reference methods according to 40 CFR, part 60, appendix A or as approved by the Administrator, within 60 days after achieving maximum production rate, but no later than 90 days after initial start-up.

(c) A test protocol shall be submitted to the OAM, Compliance Data Section, and ERMD, Air Quality Management Section, Compliance Data Group, 35 days in advance of the test.

(d) The OAM, Compliance Data Section, and ERMD, Compliance Data Group, shall be notified of the actual test date at least two (2) weeks prior to the date.

(e) All tests reports must be received by OAM, Compliance Data Section, and ERMD, Compliance Data Group, within 45 days of completion of the testing.

(f) Whenever the results of the stack tests performed exceed the levels specified in this permit, appropriate corrective actions shall be implemented immediately. The Permittee shall minimize emissions while the corrective actions are being implemented.

(g) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 60 days. Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

326 IAC 1-6-2 (Records; Notice of Malfunction)

Pursuant to IAPCB Regulation 1-6-2 (Malfunctions and scheduled maintenance) and 326 IAC 1-6-2,

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Environmental Resources Management Division (ERMD), upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to ERMD, using the Malfunction Report Forms(2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of IAPCB Regulation 1-6 and 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in IAPCB Regulation 1-6-2(a)(1) through (6) and 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [IAPCB Regulation 1-2-39 and 326 IAC 1-2-39]

326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators)

The proposed MED/dispose 580 Packed Tower Pyrolysis System EU ID # 002 is not subject to 326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators), because it is a pyrolysis unit and its construction and installation is after June 20, 1996.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 189 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Environmental Resources Management Division (ERMD) Construction Permit Application Form Y.

(a) This proposed Packed Tower Pyrolysis System will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

(b) See Appendix A (Emissions Calculations) for detailed air toxic calculations.

Conclusion

The construction and operation of this Packed Tower Pyrolysis System will be subject to the conditions of the attached proposed Registration **R 097-11796-00339.**

Appendix A: Emissions Calculations

Emission Unit ID # 002 (Packed Tower Pyrolysis Unit)

C **PM/PM10 allowable emissions** (326 IAC 4-2-2 (8-A))**:**

PM= 0.3 / 1000 lb ex * 5,073 acfm * 294 K / 1,366 K * 0.0766 lb / 1 Cu ft air * 60 min / Hr = 0.803 lb/ hr = **6.594 ton/ yr**

C **PM/PM10 Potential emissions:**

Maximum emission rate (manufacturer data):
0.55 lb/hr = 2.409 ton/yr,
which is less then 6.594 toh/yr; therefore, the source will be in compliance with 326 IAC 4-2-2 (8-A).

Potential Emissions for other pollutants

Potential emissions are calculated using the manufacturer's emission factors obtained from a stack test at a similar pyrolysis unit.

C **VOC:**

1.8 x 10^{-3} lb/hr or: **0.0079 ton/yr**

C **NOx:**
0.926 lb/hr or: **4.056 ton/yr**

C **CO:**
0.138 lb/hr or: **0.604 ton/yr**

C **SOx:**
0.537 lb/hr or: **0.235 ton/yr**

C **HCl:**
1.6 lb/hr or: **7.008 ton/yr**

C **Other HAPs: 2.8 x 10^{-3} ton/yr**

C **Total HAPs: 7.0083 ton/yr**